# Striking a Balance

Scott Rogers
Assistant Director of Operations
Vermont Agency of Transportation

# VTrans Operations Division

- 9 maintenance districts, 66 maintenance garages
  - Responsible for maintaining Vermont's infrastructure
- Public Transit Program
- Rail Program
- Aviation Program
- Central Garage – 650 pieces of equipment
  - 250 plow trucks, 200 light utility vehicles, 200 construction equip
- Traffic shop
- Maintenance Programs Section (ITS, Municipal Grants, Facility Maintenance, Maintenance Engineering)
- Environmental Section (includes Landscape Coordinator)
- Safety Section

# Vermont Infrastructure

- 3,700 miles of state, national and interstate highway
- Over 1,000 miles of guardrail
- 81,000 signs
- 130 traffic signals
- 1,000 roadway lights
- 2,686 “long” bridges (over 20’)
- 1,298 “short” bridges (6’ to 20’)
- 40,000 to 60,000 small culverts
- 16 public use airports (10 state owned)
- 600 miles of operating rail (305 miles state owned)
- 189 miles of bike/ped facilities
- 25 park and rides

# The Perfect Storm

- Aging infrastructure
- Increasing traffic volumes
- Increased freight volumes
- RESULT – wear and tear on infrastructure is dramatically accelerated and costs of repair are dramatically increased

# Culverts

- 1,113 large culverts (6 ft. to 20 ft.)
  - Typical expected lifespan is 50 years
  - 88% are 30 years or older
  - 50% are 50 years or older
- 86 “Critical” Culverts with condition rated serious or worse:  List grew from only 35 in 2003
  - Estimated costs for replacements exceeds $100M
  - Estimated costs for current treatment is $22.9M
- Estimated cost to treat all currently deficient culverts (large and small) exceeds $53M

# Bridges

- More than half of the “long” bridges (town, state and interstate) were built over 40 years ago
- Structurally deficient bridges
  - One or more load carrying components in poor or worse condition (note – this does not mean they are unsafe)
  - 13% of Interstate bridges
  - 20% of State bridges
  - 15% of town highway bridges
- Estimated costs to “fix” all currently deficient bridges exceeds $785M

# What Does This Mean?

- We can expect an increased frequency in emergency repairs.
- We have to be much more fiscally conscientious than in the past.
- Need to work with regulators to achieve compliance by working together to prioritize environmental concerns without compromising public safety.

  RESULT: We have an increasing need to find a balance between what must be done for safety, what must be done by regulation, and what we might like to do for enhancements or amenities.

# Increasing Frequency of Emergency Repairs

- Bridges:
  - Grand Isle – North Hero
  - Morristown – Tenney Bridge
- Culverts:
  - Milton:  I-89, culvert failure results in 32 cy void
  - Royalton:  VT 14, failure of 15” culvert results in road closure
  - Pawlet:  VT 149, failure of 8’ x 6’ pipe results in road closure
  - Wilmington:  VT 9 / VT 100, failure of 6’ plate pipe, void under shoulder
  - Franklin:  VT 120, failure of 8’ arch results in lane closure
  - South Burlington: I-89, failure of 7’ x 5’ pipe results in void under shoulder -15’ long, 10’ wide, 12’ deep

# Fiscal Awareness

- A large number of environmental initiatives are funded by transportation dollars.
- Transportation revenues are not projected to increase, but demands on those revenues continue to rise.
- Some environmental initiatives or concerns create cost prohibitive conditions.

# Maintenance and the Environment

- Permitting in maintenance can sometimes be a gray area
- Unlike the project development and construction process, maintenance activities are sometimes not covered by standard permits
- At what point does a maintenance activity become a regulated activity?
- Who is responsible for making that determination?


"C'mon, c'mon—it's either one or the other."

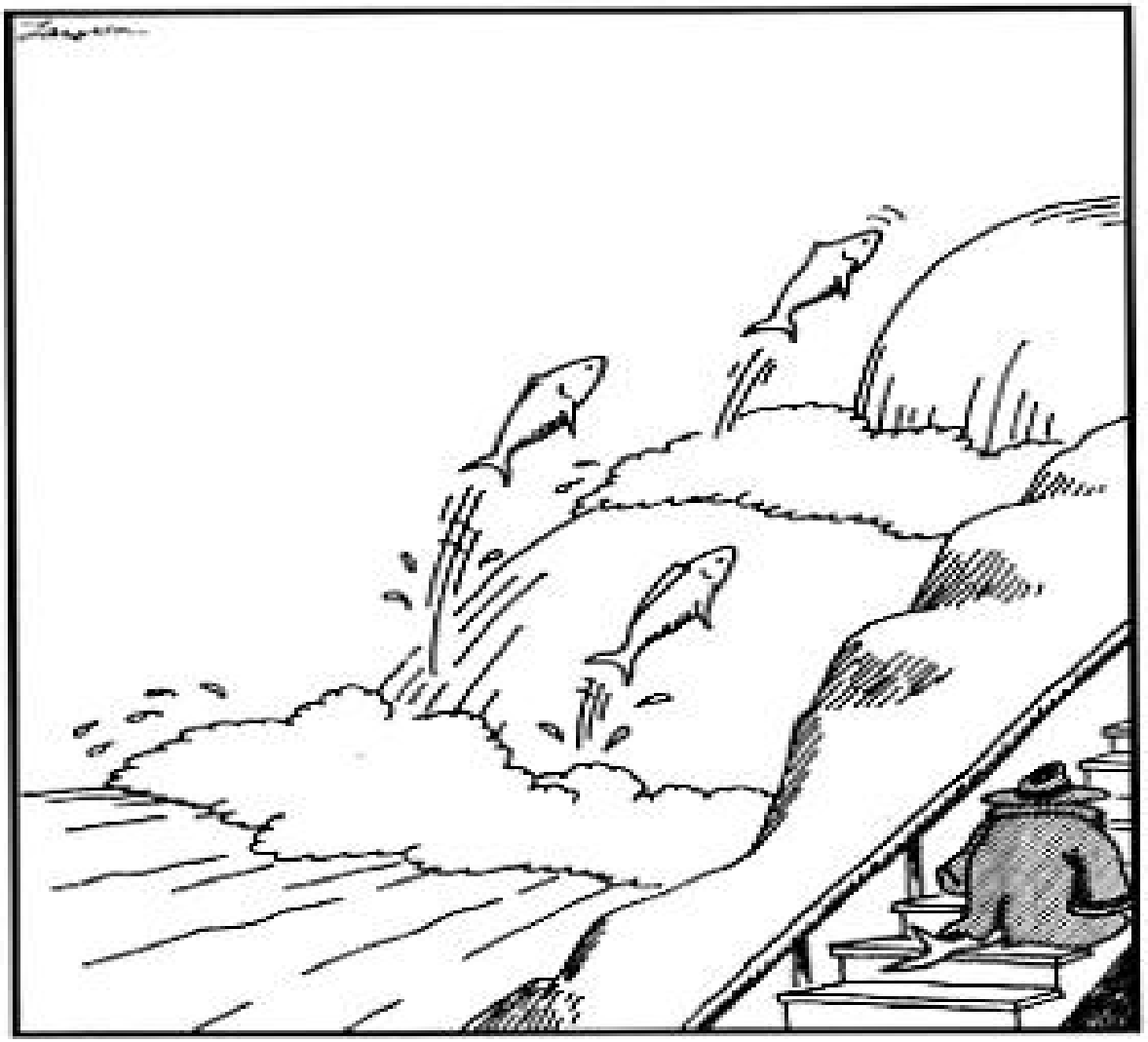
# Seeing Change

- OPS is working towards having folks on the ground who can recognize environmental impacts and take steps to avoid, minimize or reduce them.
  - Training for district forces
  - Improving communication with VTrans Env Section
  - Improving communication with resource agencies
  - Creation of OPS Environmental Position
- Buzzwords
  - Carbon footprint
  - Global warming
  - Reduction of emissions
- People see their environment changing, and sensitivity is increased

# Biggest Challenges

- Aquatic Organism Passage
- Snow & Ice Control
- Mowing and Vegetation Management

# Aquatic Organism Passage



# Mowing and Vegetation Management

Goals and Concerns

- Ensure maintenance of safe roads and bridges for the traveling public
- Achieve standardization between districts
- Reduce energy consumption and emissions
- Save money
- Protect wildlife habitats

Result:

- Mowing BMP - DRAFT
- Riparian Buffer BMP - DRAFT

# DRAFT Mowing BMP – why?

- Prevent infrastructure deterioration
- Save dollars (energy, equipment and personnel costs)
- Reduce VTrans energy consumption
- Reduce VTrans green house gas (GHG) and unhealthy emissions from mowing equipment
- Protect water quality, wildlife habitats and the roadway's surrounding natural ecology
- Visually complement the built and natural landscape

# DRAFT Mowing BMP – what?

- Limit mowing activities only to those areas where mowing is necessary for the safety of the traveling public and long-term infrastructure protection
- Use the right size equipment for the job to reduce energy costs and GHG emissions and minimize erosion of steep slopes
- Schedule during the growing season to maximize benefit and minimize cost
- Mechanisms and standards for addressing environmentally sensitive areas – riparian areas, steep slopes, wetlands, rare and endangered species and their habitats, unique natural areas, and certain wildlife habitats
- Provisions for areas of special landscape treatment
- Long term sustainable landscape management to minimize the need for mowing and use of herbicides in the future.

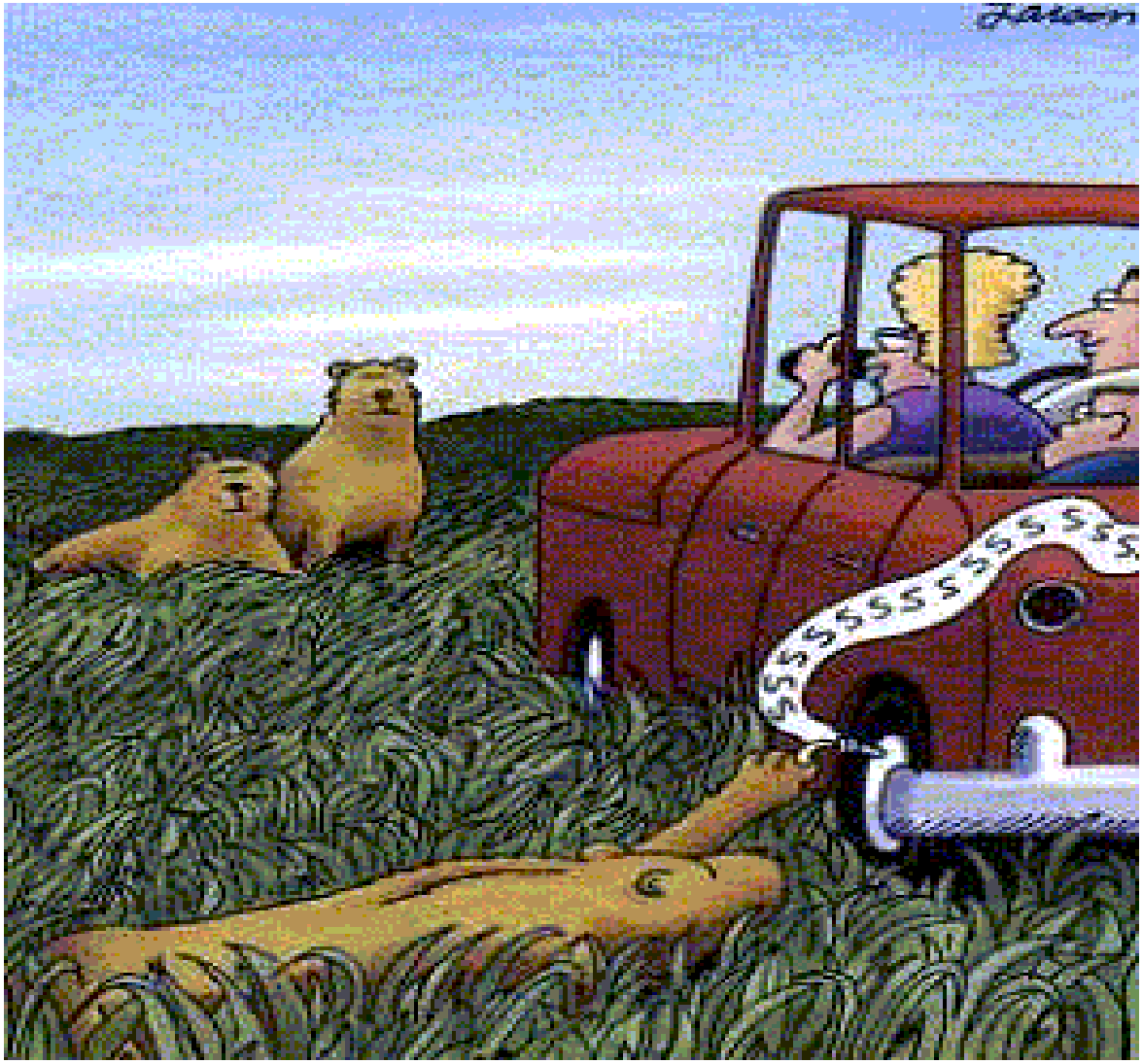
# DRAFT Mowing BMP - Standards

- 2 mower passes per year during the growing season on all principal arterials and secondary roads
- 2 mower passes per year behind all guardrail
- Mow entire ROW every third year
- Slopes over 2:1 and Riparian areas will not be mowed unless:
  - Brush or grass constitutes a hazard to the transportation infrastructure (overhanging, line of site, shading / icing, or interfering with winter maintenance)
  - The area is within the clear zone or immediately behind guardrail

# DRAFT Mowing BMP - Standards

- VTrans will consult annually with VT DFW to identify specific areas of concern including
  - Rare and endangered species and their habitats
  - unique natural areas
  - certain animal habitats
- In these areas mowing may be restricted, reduced, or postponed, provided there is no adverse impact to safety of the traveling public
- Known wetlands and wet areas will be avoided
- Wildflower plantings and other landscaped areas will be avoided

# Long Grass Can Conceal Wildlife



# DRAFT Riparian Buffer BMP – why?

- Prevent infrastructure deterioration
- Save dollars (energy, equipment and personnel costs)
- Protect water quality, wildlife habitats and the roadway's surrounding natural ecology
- *Minimize* all cutting within riparian areas recognizing that there are situations where trees and brush must be removed because they present a safety hazard or interfere with the function, maintenance or repair of transportation infrastructure

# DRAFT Riparian Buffer BMP - Standards

- VTrans will retain all riparian area trees *unless* those trees:
  - Are considered hazardous and pose a safety threat due to their poor health or other conditions that will cause them to fall on humans or facilities
  - Overhang and shade the roadway thus exacerbating icing and interfering with winter maintenance
  - Constitute a clear zone hazard
  - Affect the line of sight for the traveling public
  - Are adjacent to abutments and piers and other bridge and culvert members and interfere with bridge and culvert maintenance activities or promote deterioration of the bridge or culvert

# DRAFT Riparian Buffer BMP - Standards

- VTrans will coordinate with the Agency of Natural Resources (ANR) stream engineers when removing riparian area hazardous tree(s) that *do not* affect a bridge or culvert, overhang the roadway, constitute a clear zone hazard or impact the line of sight for the traveling public

- When removing mature riparian area trees over twelve inches diameter at breast height (dbh), the Operations Division will coordinate with the VTrans Regional Environmental Specialist (RES) to determine appropriateness of replanting two native seedlings/cuttings for every tree removed

- Downed trees in the waterway will not be removed unless they pose a threat to transportation infrastructure, exacerbate hazardous flooding conditions or block the inlet or outlet of culverts carrying perennial streams

# Balancing Transportation Needs…

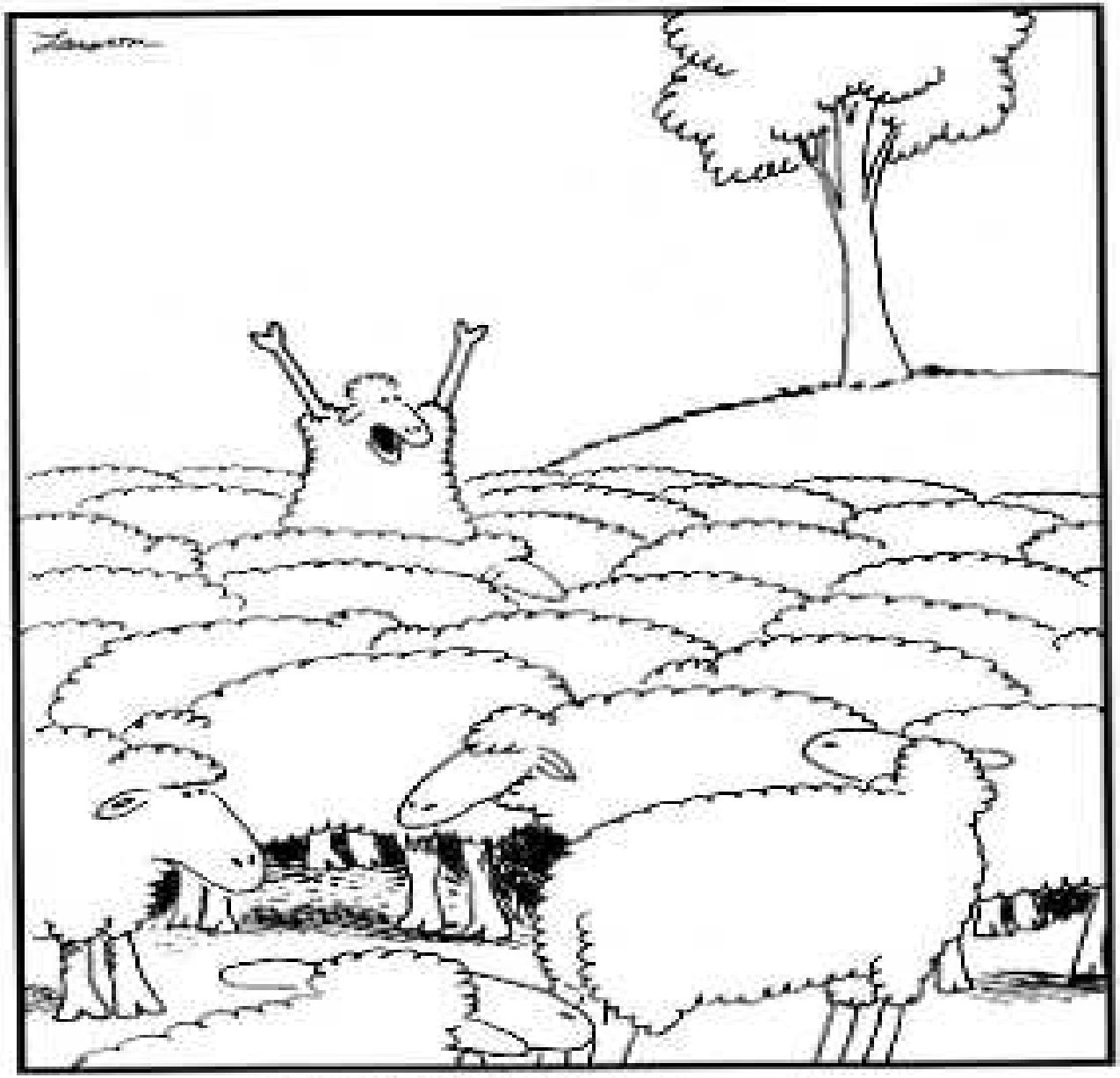
- Aging transportation system
- Funding outlook (Transportation fund and federal funding)
- Costs of deferring maintenance
- Construction cost inflation
- Culvert and bridge maintenance needs versus project development needs
- Increasing frequency of emergency repairs

# … With Other Needs

- Environmental needs versus transportation needs
- Green Mountain State – we are known for “being green”
- VTrans does a great job of valuing all interests
- Affordability is important – we all must live within our fiscal means
- Focus on safety and the bigger picture

# Breaking Stereotypes

- VTrans was historically thought of as not being very environmentally conscious – but that has changed
- VTrans is now considered a very good steward of the environment
- Regulatory agencies, even different divisions in the same agency, in a lot of cases seemed to only care about their one part of the world
  - Example:  Stormwater vs Wetlands
- This is starting to change with good communication.  But we have a long way to go.
  - It is a small state – communication is easy!
- Try to get regulators to understand multiple points of view. Understanding and communication is the key to achieving balance.



"Wait! Wait! Listen to me! …
We don't *have* to be just sheep!"

# NY I-88, Exit 10 – June 28, 2006



Questions?